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Born April 6, 1955, Kharkov, USSR (now Ukraine).
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EDUCATION:

2010 **PhD in Physics and Math**	"*Metastable current states and controlled stochastic resonance in superconducting films and SQUIDs*", supervisor Dr. Sc. V.I. Shnyrkov, defended Oct. 20, 2009 in ILTPE, approved Feb. 10, 2010 by High Attestation Committee.
Sept. 1972 - Feb.1978 **M.S. degree with distinction** in phys. & eng. on specialty "Cryogenic engineering"	Kharkov Polytecnical Institute, Dept.of Physics and Engineering **Diploma thesis** "*Effect of microwave irradiation on superconductivity of tin thin films*", supervisors Dr. Sc. I.M. Dmitrenko and Dr. Yu.G. Bevza (ILTPE).

CAREER AND WORK:

2015-to present **Senior researcher** ILTPE NASU	*Experimental studies and computer simulation of controlled stochastic resonance in an rf SQUID. Numerical studies of superconducting qubits and qubit-based devices. Heading a research group.*
2013-2015 **Researcher** ILTPE NASU	*Building and testing low-temperature experimental setup to study stochastic resonance in SQUIDs. First experiments. Numerical modeling of stochastic amplification of weak signals in SQUIDs. Participating in analysis of superconducting flux qubits.*
1986-2013 **Juniour researcher** ILTPE NASU	*Low temperature experiments on current-induced isothermal S-N transitions in wide tin thin films, dynamics of superconductivity destruction in high-T_c superconducting ceramics and thin films, laser microscopy imaging of superconducting properties in various low- and high-T_c superconducting structures. Designing hardware electronics and software for novel low-temperature laser scanning microscopes and other PC-controlled setups in the research group. Numerical studies and computer simulation of stochastic dynamics of magnetic flux in rf SQUIDs, especially effect of stochastic resonance. Preparing PhD thesis. Designing SQUID magnetometer setup for stochastic resonance exploration.*
1981-1986 **Senior engineer** ILTPE NASU	*Experimental studies of synchronization of Josephson junctions and resonant tunneling in bismuth films sandwiches.*

1978-1981 **Engineer** ILTPE NASU	*Numerical modeling and experimental study of microwave-enhanced superconductivity in thin films. Experimental study of non-equilibrium processes in stochastic Josephson media. "Abnormal hysteresis" in dc characteristics of superconducting granulated V films was discovered.*

PARTICIPATION IN PROJECTS:

Current: NATO SPS Programme, Grant No. G5796, "Single microwave photon counter based on tunable flux qubit" (2020-2023)
BMBF "Low Temperature Scanning Laser Microscopy of Superconducting Structures", Project-no. UKR-003-99 (1999-2001)
BMBF (1995-96)
International Science Foundation Grant No. U9M200 (1995-1996)
Ukrainian State Committee for Science and Technology projects Scanner-99, Local-99, Injector-99

SCIENTIFIC VISITS:

Twente University (Enschede, Netherlands) 1993 (1 month), 1994 (3 weeks).
Erlangen-Nurnberg University (Erlangen, Germany) 1995 (1 month)

Member of the Ukrainian Physical Society

AREAS OF INTEREST AND EXPERTISE:

- *Superconducting qubits and quantum devices*
- *Stochastic resonance in SQUIDs, experiment and computer modeling*
- *Mechanisms of resistive state in low- and high-Tc thin film superconductors*
- *Low-temperature scanning laser microscopy of superconductors*

ADDITIONAL FIELDS OF INTEREST:

- *Low-temperature micropower HEMT amplifiers*

RELEVANT SKILLS:

- *Software and electronics engineering for computer-aided physical experiment and data processing*

TEACHING

Lectures for PhD students on "Modern physics of superconductivity: applied aspects, theory and experiment", B.Verkin ILTPE NASU, 2021.
Supervision of PhD dissertation work (2020-2024)
Supervision of BS and MS diploma works (V.N. Karazin Kharkiv National University, 2016-19).
Supervision of 2 MS diploma works (Kharkov Polytecnical Institute students, 1985-86).

PUBLICATIONS IN PEER-REVIEW JOURNALS

1. A.M. Korolev, V.M. Shulga, O.G. Turutanov. **Ultra-low supply voltage crystal quartz oscillator**. arXiv preprint arXiv:2104.00627. Will be published in Rev. Sci. Instrum. 93 (5) (2021).
2. V. I. Shnyrkov, W. Yangcao, O. G. Turutanov, V. Y. Lyakhno, A. A. Soroka. **Scheme for Flux-Qubit-Based Microwave Single-Photon Counter with Weak Continuous Measurement**. 2020 IEEE Ukrainian Microwave Week (UkrMW), 737-742.
3. A. P. Shapovalov, V. E. Shaternik, O. G. Turutanov, O. Yu. Suvorov, A. A. Kalenyuk, V. Yu. Lyakhno, U. Yilmaz, P. Febvre & V. I. Shnyrkov. **Small capacitance self-shunted MoRe–Si(W)–MoRe junctions for SQUIDs applications.** Appl Nanosci 10, 2843–2848 (2020). https://doi.org/10.1007/s13204-020-01254-9

4. A. P. Shapovalov, V. E. Shaternik, O. G. Turutanov, V. Yu. Lyakhno, V. I. Shnyrkov. **On the possibility of faster detection of magnetic flux changes in a single-photon counter by RF SQUID with MoRe–Si(W)–MoRe junction.** Low Temp. Phys. 45, 776-784 (2019)
5. O. G. Turutanov, V. Yu. Lyakhno, M. E. Pivovar, V. I. Shnyrkov. **Controlled Stochastic Amplification of a Weak Signal in a Superconducting Quantum Interferometer.** Low Temp. Phys. 45, 60 (2019)
6. A. G. Sivakov, O. G. Turutanov, A. E. Kolinko, A. S. Pokhila. **Spatial characterization of the edge barrier in wide superconducting films.** Low Temp. Phys. 44, 226 (2018)
7. V. I. Shnyrkov, Wu Yangcao, A. A. Soroka, O. G. Turutanov, V. Yu. Lyakhno **Frequency-tuned microwave photon counter based on a superconductive quantum interferometer**. Low Temp. Phys. 44, 213-220 (2018)
8. A.M. Korolev, V.M. Shulga, O.G. Turutanov, V.I. Shnyrkov. **Measurement of brightness temperature of two-dimensional electron gas in channel of a high electron mobility transistor at ultralow dissipation power.** Solid-State Electronics 121, No. 3, 20 (2016)
9. V.I. Shnyrkov, A.M. Korolev, O.G. Turutanov, V.M. Shulga, V.Yu. Lyakhno and V.V. Serebrovsky. **Isolation of a Josephson qubit from the electromagnetic environment.** Low Temp. Phys. 41, 867 (2015).
10. A.M. Korolev, V.M. Shulga, O.G. Turutanov, and V.I. Shnyrkov. **A wideband radiofrequency amplifier for investigations at temperatures from 300 to 0.1K.** Instrum. Exper. Tech. 58, 478 (2015)
11. V.I. Shnyrkov, W. Krech, D. Born, V.V. Serebrovsky, and O.G. Turutanov. **Charge-flux qubit coupled to a tank circuit in a strong low-frequency electromagnetic field.** Low Temp. Phys. 40, 1035 (2014)
12. O.G. Turutanov, V.Yu. Lyakhno, and V.I. Shnyrkov. **Experimental observation of induced stochastic transitions in a multiwall potential of an rf-SQUID loop.** Low Temp. Phys. 40, 1026 (2014)
13. O.G. Turutanov, V.A. Golovanevskiy, V.Yu. Lyakhno, V.I. Shnyrkov. **Stochastic resonance in an RF SQUID with shunted ScS junction.** Physica A 396, 1 (2014)
14. V.I. Shnyrkov, A.A. Soroka, O.G. Turutanov, A.M. Korolev. **Superposition of states in flux qubits with a Josephson junction of the ScS type.** Low Temp. Phys. 38, 301 (2012)
15. V.I. Shnyrkov, A.A. Soroka, O.G Turutanov. **Quantum superposition of three macroscopic states and superconducting qutrit detector.** Phys. Rev. B 85, 224512 (2012)
16. I.F. Kislyak, M.A. Tikhonovsky, D.G. Malykhin, T.Y. Rudycheva, V.G. Yarovoy, A.A. Blinkin, V.V. Derevyanko, S.Y. Sayenko, G.A. Kholomeyev, A.G. Sivakov, A.S. Pokhila, O.G. Turutanov, **Investigations of superconductivity in MgB2 bulk and Fe/MgB2 wires,** Problems of Atomic Science and Technology, Issue 6, p. 107, 2009.
17. O.G. Turutanov, V.I. Shnyrkov, and A.M. Glukhov. **Stochastic-parametric amplification of narrow-band signals in a single-junction SQUID interferometer.** Low Temp. Phys. 34, 37 (2008)
18. A.M. Glukhov, O.G. Turutanov, V.I. Shnyrkov, and A.N. Omelyanchouk. **Stochastic resonance in superconducting loops containing Josephson junctions. Numerical simulation.** Low Temp. Phys. 32, 1123 (2006)
19. A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, A.N. Omelyanchouk, Steven M. Anlage, A. Lukashenko, A.V. Ustinov, D. Abraimov. **Laser scanning microscopy of HTS films and devices (Review Article).** Low Temp. Phys. 32, 592 (2006)
20. O.G. Turutanov, A.N. Omelyanchouk, V.I. Shnyrkov, Yu.P. Bliokh. **Stochastic resonance based input circuits for SQUIDs.** Physica C 372-376P1, 239 (2002)

21. A.G. Sivakov, A.V. Lukashenko, O.G. Turutanov, I.M. Dmitrenko, D.V. Abraimov, P. Müller, A.V. Ustinov. **Spatial distribution of critical current and supercurrent density in individual filaments extracted from Ag-sheated Bi-2223 tapes.** Physica B 284-288, 2071 (2000).
22. N.Ya. Fogel, A.S. Sidorenko, E.I. Buchstab, O.G. Turutanov. **Giant oscillations of coupling strength on Mo/Si multilayers with the constant thickness of semiconductor layers.** Phys. Rev. B 56, 2372 (1997)
23. A.V. Lukashenko, A.G. Sivakov, A.P. Zhuravel, O.G. Turutanov, I.M. Dmitrenko. **Spatial distribution of superconducting parameters and peculiarities in the behavior of thin-film high-Tc Josephson junction arrays.** Low Temp. Phys. 22, 850 (1996)
24. A.G. Sivakov, A.P. Zhuravel, O.G. Turutanov, and I.M. Dmitrenko, **Spatially Resolved Characterization of Superconducting Films and Cryoelectronic Devices by Means of Low Temperature Laser Scanning Microscope.** Appl. Surf. Science 106 390 (1996).
25. A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko. **A low temperature system with a pulse UV laser for scribing HTSC films and single crystals** Appl. Surf. Science, 106 321 (1996).
26. N.Ya.Fogel, O. G. Turutanov, A.S.Sidorenko E.I.Buchstab. **Mo/Si multilayers: giant oscillations of coupling strength at variation of metal layer thickness.** Czechoslovak Journal of Physics, vol.46 (1996), suppl.S5, pp.2845-2846
27. A.G. Sivakov, A.P. Zhuravel, O.G. Turutanov, I.M. Dmitrenko. **Laser scanning visualization of evolution of vortex instability in current-carrying superconducting strips.** Czechoslovak Journal of Physics, v 46, suppl., pt.S2, p 877, 1996.
28. A.P. Zhuravel', A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko. **Spatially resolved study of transition to the phase-slip lines resistive state in wide superconducting strips.** Czechoslovak Journal of Physics, v 46, suppl., pt.S2, p 643, 1996.
29. A.G. Sivakov, O.G. Turutanov, A.P. Zhuravel', I.M. Dmitrenko, J.W.M. Hilgenkamp, G.C.S. Brons, J. Flokstra, H. Rogalla. **Laser scanning microscopy imaging and local characterization of superconducting properties in high Tc thin film multiturn coil.** Physica C 232 93 (1994)
30. A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko, K. Joosse, G.J. Gerritsma, H. Rogalla. **Photoresponse of epitaxial $YBa_2Cu_3O_{7-x}$ ultrathin films.** Cryogenics, v 34, suppl.issue, p 875, 1994.
31. A.V. Lukashenko, A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko, I.N. Chukanova. **Direct measurement of critical currents of individual weak links in DC interferometer by scanning laser microscope.** Cryogenics, v 34, suppl.issue, p 879, 1994.
32. I.M. Dmitrenko, A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, I.N. Chukanova. **Spatial separation of areas of bolometric and non-bolometric response components of high-Tc films by low temperature laser scanning microscopy.** Low Temp. Phys. 19, 747 (1993)
33. I.M. Dmitrenko, P.A. Grib, A.G. Sivakov, O.G. Turutanov, A.P. Zhuravel. **Study of spatial distribution of critical currents in high-Tc films by laser scanning microscopy method.** Low Temp. Phys. 19, 259 (1993)
34. I.M. Dmitrenko, P.A. Grib, A.G. Sivakov, O.G. Turutanov, V.G. Volotskaya, A.P. Zhuravel. **Investigation of the spatial distribution of film superconducting parameters by laser scanning**. Weak Superconductivity, p 81, 1990.
35. A.G. Sivakov, I.M. Dmitrenko, V.G. Volotskaya, O.G. Turutanov. **Isothermal current transition from superconducting to normal state in thin tin films.** Sov. J. Low Temp. Phys. 15, 330 (1989)
36. V.G. Volotskaya, A.G. Sivakov, O.G. Turutanov. **Excessive current in wide superconducting films.** Sov. J. Low Temp. Phys. 12(9), 529-532 (1986)
37. Yu. G. Bevza, I.M. Dmitrenko, V.I. Karamushko, O.G. Turutanov. **Limitations in microwave stimulation of superconductivity.** Sov. J. Low Temp. Phys. 6, 351 (1980).